

OIL ANALYSIS REPORT

Area Bernardsville Machine Id ISUZU 3458

Component Diesel Engine Fluid

GIBRALTAR 15W/40 SUPER S-3 LX (11)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

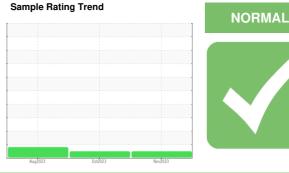
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

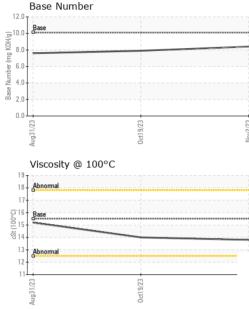
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

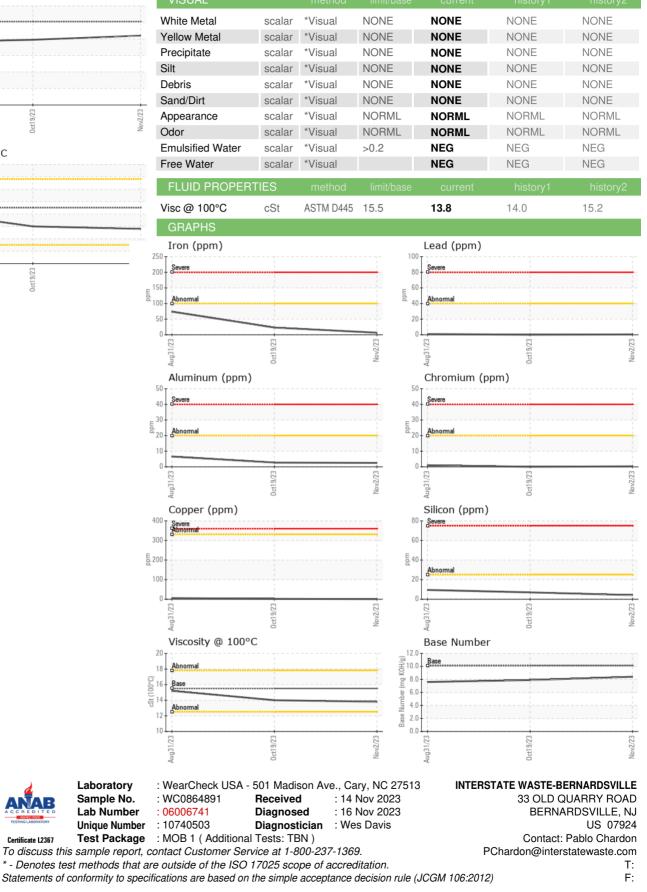


Sample NumberClient InfoWC0864891WC0864891WC0864891WC0803083Sample DateClient Info687167576357Oil AgehrsClient Info687167576357Oil ChangedClient InfoMCNRMLNORMALABNORMALSample StatusClient InfoInfoChangedChangedChangedGlycolWC Methods5<1.0<	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Date Image Client Info 02 Nov 2023 19 Oct 2023 31 Aug 2023 Machine Age hrs Client Info 6871 6757 6357 Oil Age hrs Client Info 0 6757 6357 Oil Changed Image Client Info 0 6757 6357 Oil Changed Image Client Info NORMAL NORMAL ABNORMAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >5 1.0 <1.0 <1.0 Glycol Method imit/base current history1 history2 From mppm ASIM 05185m >100 7 23 74 Chromium ppm ASIM 05185m >20 -1 0 0 Silver ppm ASIM 05185m >20 2 3 7 Lead ppm ASIM 05185m >33 -1 0 0 -1 <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>WC0864891</th> <th>WC0864906</th> <th>WC0830836</th>	Sample Number		Client Info		WC0864891	WC0864906	WC0830836
Machine AgehrsClient Info687167576357Oil AgeIrrsClient Info067576357Oil ChangedChangedChangedChangedChangedChangedSample StatusaaImit/baseCurrentNORMALABNORMALCONTAMINATIONmethodimit/basecurrenthistory1history2FuelWC MethodS<1.0<1.0<1.0Glycol1WC MethodS<1.0NEGNEGWEAR METALSmethodimit/basecurrenthistory1history2IronppmASTM DSI85>10072374ChromiumppmASTM DSI85>40000NickelppmASTM DSI85>33<1100SilverppmASTM DSI85>330<110<11CopperppmASTM DSI85>330<100VanadiumppmASTM DSI8515000VanadiumppmASTM DSI8515000Rorn MagneseppmASTM DSI85150001MagnagenseppmASTM DSI85150011MagnagenseppmASTM DSI85100580978GaldumppmASTM DSI851050111511401342MagnagenseppmASTM DSI85150011 <tr< th=""><th></th><th></th><th>Client Info</th><th></th><th>02 Nov 2023</th><th>19 Oct 2023</th><th>31 Aug 2023</th></tr<>			Client Info		02 Nov 2023	19 Oct 2023	31 Aug 2023
Oil Changed Sample StatusClient Info NORMALChanged NORMALChanged NORMALChanged ABNORMALCONTAMINATIONmethodimil/basecurrenthistory1history2FuelWC Method>5+1.0<1.0<1.0GlycolwC Method>5+1.0NEGNEGWEAR METALSmethodimil/baseournenthistory1history2IronppmASTM D585m>10072.37.4ChromiumppmASTM D585m>2.0<100NickelppmASTM D585m>2.0<100SilverppmASTM D585m>2.0<100AluminumppmASTM D585m>3.0<10<1CopperppmASTM D585m>3.0<10<1CadmiumppmASTM D585m>3.0<10<1VanadiumppmASTM D585m>1.00<1<1VanadiumppmASTM D585m>1.00<1<1CadmiumppmASTM D585m1.00<1<1RoronppmASTM D585m1.00<1<1ManganescppmASTM D585m1.00<1<1ManganescppmASTM D585m1.00<1<1ManganescppmASTM D585m1.00<1<1ManganescppmASTM D585m1.0	Machine Age	hrs	Client Info		6871	6757	6357
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Fuel WC Method >5 <1.0	Sample Status				NORMAL	NORMAL	ABNORMAL
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Calcium ppm ASTM D5185m 1050 1394 1521 1348 Phosphorus ppm ASTM D5185m 1150 986 921 1081 Zinc ppm ASTM D5185m 1270 1115 1140 1342 Sulfur ppm ASTM D5185m 3934 3182 3583 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 3 0 Sodium ppm ASTM D7844 >3 0.3 1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 1 3 Nitration Abs/cm *ASTM D74153	Boron Barium	ppm	ASTM D5185m ASTM D5185m		37 6	23 0	3 0
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Soot % % *ASTM D7844 >3 0.3 1 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 6.2 9.3 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 19.7 28.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.6 15.0 22.8	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	66 1000 1050 1150 1270 limit/base >25	37 6 66 0 580 1394 986 1115 3934 current 4	23 0 66 <1 495 1521 921 1140 3182 history1 7 3	3 0 67 <1 978 1348 1081 1342 3583 history2 10 4
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Oxidation Abs/.1mm *ASTM D7414 >25 12.6 15.0 22.8	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >25 >20 limit/base >3	37 6 66 0 580 1394 986 1115 3934 <u>current</u> 4 0 2 <u>current</u> 0.3	23 0 66 <1 495 1521 921 1140 3182 history1 7 3 3 3 history1 1	3 0 67 <1 978 1348 1081 1342 3583 history2 10 4 0 history2 ∧ 3
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >25 >20 limit/base >3 >20	37 6 66 0 580 1394 986 1115 3934 <i>current</i> 4 0 2 <i>current</i> 0.3 6.2	23 0 66 <1 495 1521 921 1140 3182 history1 7 3 3 3 history1 1 9,3	3 0 67 <1 978 1348 1081 1342 3583 history2 10 4 0 history2 0 history2 3 10 4 0
Base Number (BN) mg KOH/g ASTM D2896 10.1 8.4 7.9 7.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 225 >25 >20 limit/base >3 >20 >3 >20	37 6 66 0 580 1394 986 1115 3934 <u>current</u> 4 0 2 <u>current</u> 0.3 6.2 17.7	23 0 66 <1 495 1521 921 1140 3182 history1 7 3 3 3 history1 1 9.3 19.7	3 0 67 <1 978 1348 1081 1342 3583 history2 10 4 0 0 history2 3 14.6 28.6
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	66 1000 1050 1150 1270 225 220 220 imit/base >3 >20 >30 30 imit/base	37 6 66 0 580 1394 986 1115 3934 <i>current</i> 4 0 2 <i>current</i> 0.3 6.2 17.7 <i>current</i>	23 0 66 <1 495 1521 921 1140 3182 history1 7 3 3 3 history1 1 9.3 19.7 history1	3 0 67 <1 978 1348 1081 1342 3583 history2 10 4 0 history2 0 history2 3 14.6 28.6



OIL ANALYSIS REPORT





Certificate L2367

Contact/Location: Pablo Chardon - INTBER